Flight

A Journal devoted to the Interests, Practice and Progress of
Aerial Locomotion and Transport.

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THE AERO EXHIBITION AT OLYMPIA.

It would not be easy to light upon a more significant sign of the times than is provided by the arrangements that have been concluded between the Aero Club of the United Kingdom and the Society of Motor Manufacturers in connection with the Exhibition which is to be held at Olympia in the latter part of the month of March. For one thing, the very fact that it is to be known as the Aero Exhibition instead of the Commercial Vehicle Show is full of meaning, and for another thing, the co-operation of the Society with the Aero Club, thus early in the day, is full of happy augury. Briefly stated, commercial vehicles have ceased to be a novelty needing an Exhibition to bring them before the notice of the business men of the country, while *per contra* the aeroplane and the dirigible have reached the stage at which exhibitions are actually essential to the bringing forward of the new era which they represent so fully. It does not, of course, necessarily follow that because the S.M.M.T. are organising this Exhibition under the auspices of the Ae.C.U.K. those two bodies will continue to work hand in glove in self-defence of one another as the sole representatives respectively of the aeronautic owners and aeronautic manufacturers throughout the Kingdom. But it is nevertheless highly desirable that the fully accredited institutions which are to assume supreme sway over the aeronautic destinies of the country should be installed on an impregnable foundation as soon as possible, and that the relationships between the national Club, the national trade society and, for that matter, the national scientific institution also, should be established on well-defined and lasting lines with as little delay as may be. From many points of view there is nothing more natural than that the S.M.M.T. should assume the same position towards the aeronautic world that it already holds in relationship to the automobile industry. The two spheres of mechanical industry would be closely akin even if they did not happen to overlap anything like as much as seems inevitable, while as regards the benefits that accrue to any new industrial art by having an already formed and wealthy society behind it, these are sufficiently obvious. Hence, it is good news for both industries that the first really big event connected with the era of practical flight in Great Britain is under the combined aegis of the Aero Club and the Society. That the exhibition itself is to be organised upon an adequate and impressive scale is assured from the fact that the big hall is to be devoted to the purpose. To encourage all who have anything to show of a strictly aeronautic kind (dirigibles, complete aeroplanes, aero engines, &c.) space is moreover offered free of charge on this special occasion, all obstacles on the score of expense being thus removed for those whose resources may need to be husbanded in view of the heavy drain that is inseparable from pioneer work of any description. Owing to the large amount of room which aeroplanes or airships occupy when inside a building, the number of stands which can be found even in such a large hall as that at Olympia is limited, and consequently, although there are not as yet any very great number of such machines in the world, we are told the management urge the need for early applications from those who are able to bring themselves into prominence by exhibiting their productions. It is to be hoped that no inventor will hold back in the belief that he possesses anything in the nature of a master patent, which may be jeopardised, either as regards home rights or future foreign rights, by showing his machine in public. Already it has been proved that there is more than one way in which to achieve mechanical flight, and the past history of the motor car has demonstrated *ad infinitum* that, in high mechanical developments of this character, monopoly in any shape or form, is positively detrimental to anyone who wishes to convert into money his abilities as an originator or as a designer. No single individual or firm can hope to perfect an aeroplane off his or its own bat, within the time that is rendered available by the contemporaneous progress of a whole army of competitors, and wise is the aeronautic inventor of to-day who takes heed of the lessons that are to be learnt from the past decade of automobilism. Except in minor details the possession of patents of a basic kind are apt to be a hindrance to commercial success rather than an assistance, because even an inferior system, developed simultaneously and free from all restraint, in hundreds of factories throughout the civilised world, actually stands a far better chance of meeting the public demand than does a more theoretically perfect system which may be cooped up for years in the workshops of the monopoly holder. This fact has stood out with unmistakable clearness during the whole period of development of the automobile, and there is every reason to suppose that history will repeat itself in an even more pronounced form during the childhood of the aeronautic industry. Apart from the display of complete machines at the forthcoming Show, it is safe to anticipate a fine array of accessories. In this respect, the field is already much wider than most people imagine, and incidentally it may be remarked that therein lies the nucleus for the British aeronautic industry. At Olympia, that *industry* will become a reality—flight will be more than a fascinating *subject*—to the British people.

B.

THE TRIALS OF A PILOT.

BEING SOME ACCOUNT OF THE EXPERIENCES OF M. ESNAULT PELTERIE AND OTHERS IN THE AIR.

On Tuesday of this week, January 26th, Mons. Esnault Pelterie—who is well known to our readers as the inventor of a novel type of aero motor, and as an ardent supporter of the monoplane principle in flying machines—delivered a lecture on aviation before the members of the Aero Club at the Club House of the Royal A.C. M. Pelterie held his audience for upwards of three hours, and even then it was obvious that he was unable to say as much as he would have wished during the later sections of his address—which, by the way, was illustrated with lantern slides and cinematograph views. It was the more regrettable, too, that this should have been the case inasmuch as the author naturally reserved the subject of modern experimental work until the last, so that the greater part of the remarks which he found time to make applied more particularly to the labours of those pioneers who have made what has already come to be regarded somewhat as ancient history in the art of flying. The historical side of a subject is always a popular one with speakers, and as a very little history covers a tremendously wide field of discourse it only too frequently happens that the problems of more immediate interest get pushed into the background at such meetings as these. It was a sympathetic audience, however, who listened to M. Pelterie's remarks on Tuesday night, and his excellent command of the English language, which enabled him to speak unhesitatingly throughout, with but an occasional reference to his notes, did much to hold his hearers' attention through such a relatively long period.

There was very little doubt at any time, however, that the audience was vastly more interested in having a personal narrative of the author's own private experiments than in learning once again about the comparatively well known work of Hargreave, Pilcher, Lilienthal, Chanute, and the Brothers Wright. It was the rumours relating to the flights accomplished by these latter pioneers which was, as a matter of fact, instrumental in causing M. Esnault Pelterie to investigate the problem of artificial flight for himself. He had carefully studied all the available information relating to the Wright gliders, and, as we have often had occasion to remark before, the Brothers Wright were by no means secret [illegible] stage of their work—and he constructed a glider which was very much like theirs in 1904. With this apparatus he carried out practical experiments from sand hills in the vicinity of Calais, but the almost perpetual inclemency of the weather from the aviator's point of view caused him to very soon seek a less precarious mode of investigation.

As a means of obtaining an artificial draught in the right direction at an appropriate velocity, he utilised his motor car, attaching his glider to it by a rope so that it should act in the manner of a kite. One little detail, however, did M. Pelterie forget, and that was to establish any system of communication between himself and his chauffeur for service during such times as he might happen to be aloft in his machine. This neglect went near to costing M. Pelterie his life, for having satisfactorily risen in the air on one occasion, he was unable to get his commands executed at the right moment, and the glider pitched forthwith head first on to the ground. How he escaped, he is uncertain to this day, but escape he did, and vowed henceforth to forswear that particular form of investigation.

Being of a scientific turn of mind, however, M. Pelterie was still intent upon establishing a certain amount of fundamental data of value to himself and others, for he had not, it would seem, that peculiar desire to fly first and learn afterwards which characterises the *modus operandi* of so many of the more modern would-be [illegible] to the [illegible]. He saw that while a motor towed kite was no safe place for its pilot, an occupation of the car at the other end of the string would be far less risky to life, and he forthwith rigged up an apparatus which resembled what might be described as an enormous limousine hood, supported on uprights, from the body of the vehicle. This hood was virtually an aeroplane surface, so arranged that its movements could be recorded and observed on instruments carried lower down in the car itself. The car was driven along the highways at speeds which would admittedly have been impossible in England with any regard to the law or safety of the public, and a quantity of data was collected about the behaviour of various aeroplane surfaces under these particular conditions.

Among other information which M. Pelterie collected in the course of his earlier experiments were data to the effect that a piece of wire offers resistance to the air which is altogether disproportionate to its size. Almost as much resistance as a piece of wood as thick as a man's arm, said M. Pelterie in the course of his lecture, and although this is [illegible] a very little [illegible], even when only a minimum allowance is made for quite ordinary differences in muscular development, the comparison is of a sufficiently startling nature to attract attention. It led M. Esnault Pelterie to espouse forthwith the monoplane type of flying machine, because, he argued, it would be impossible to build a double-decker without wires which would make this latter form of machine relatively inefficient. Incidentally, it may be remarked that M. Pelterie considers it is the vibration of the wires which causes such a tremendous wind resistance.

Still aiming at solving his thus discovered *bête noir*, Mons. Pelterie decided that he would have to build a monoplane with wings of sufficient strength to be entirely self-supporting from their attachment to the body, and having laid down this fundamental principle he evolved from it a peculiarity which has made the R.E.P. monoplane unique. All other flying machines which make use of wheels for starting have a bogey of the tricycle type so that they run normally on an even keel. The Pelterie machine, on the other hand, has only a pair of wheels below its longitudinal axis, and it makes use of either one of the two wings as an outrigger for its support when standing still. The wing tips have bicycle wheels fitted to them to protect them from the ground, and the first portion of an initial sprint in starting is actually accomplished with the machine in this lop-sided position. In order to establish a balance on the two main wheels M. Pelterie operates a lever which warps the wing surfaces, and thereby causes the wind to exercise a greater lifting effect upon that which runs in contact with the ground than is acting upon the other wing which is inclined towards the [illegible] the machine rolls up o[illegible] to any [illegible] to balance, final[illegible] when a sufficient speed has [illegible]

Experience [illegible] flight find [illegible] the novice used when they first try to ride bicycles, that keeping the machine going does not complete the full accomplishment of the art which they have set out to learn. Every journey must have an end, and the landing [illegible] is [illegible] of an anxious experience. M. Pelterie has [illegible] his arms [illegible] in all sorts of positions, [illegible] and otherwise, and even at the ending of one of his most satisfactory flights he and his machine had to be pulled backwards out of a [illegible]. In such matters M. Pelterie has been by no means alone, however, and perhaps the most keenly interesting of the various cinematograph views which added so greatly to the entertainment of the audience on Tuesday evening was a film depicting [illegible] by M. [illegible]. In one of these the glider which had been [illegible] [illegible] carrying with it the aeroplane pilot who although [illegible] for some seconds [illegible] [illegible] that they have [illegible] be considered a nuisance by spectators.

Below we give the actual notes from which M. Pelterie delivered his lecture. [illegible] condensed [illegible] as they give certain figures [illegible] differences [illegible] did not allow of their own. The arrangement is [illegible] chronological order [illegible] in places where details [illegible] but the experimenter in question was continuing or had renewed his trials in that year.

SUMMARY OF THE FLYING MACHINES AND MODELS, TOGETHER WITH THEIR PERFORMANCES, REFERRED TO BY M. ESNAULT PELTERIE.

First Category.—Motor-lifted Free Machines without Driver.

1879.

Hargrave.—[illegible]

[illegible].—Weight [illegible] speed about 27 m.p.h.

[illegible]

[illegible].—Weight [illegible] speed [illegible] m.p.h. [illegible] distance [illegible]

[illegible]

[illegible]

Langley.—[illegible] Length [illegible] weight [illegible] speed [illegible] m.p.h. distance [illegible]

Second Category.—Motorless Machines with Driver.

1893.

Lilienthal.—[illegible] by gliding off a hill [illegible] high [illegible]

[illegible]

Chanute.—[illegible] weight [illegible] and [illegible] rudder.

Pilcher.—[illegible] September 30th, 1899.

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A Claim for Compensation.

A [illegible] was heard [illegible] Wandsworth County Court on Monday, when a labourer named [illegible] sued Messrs. Short [illegible] for compensation on account of injuries received in connection with a balloon ascent. According to [illegible] the [illegible] ground and was beckoned [illegible] by Mr. Short, and told to hold on [illegible] the basket of a balloon which was being prepared for an ascent. The signal to let go

[illegible]

[illegible] weight [illegible] speed [illegible] m.p.h. angle of [illegible] 10 deg. [illegible]

1901.

Capt. Ferber.—[illegible]

1903.

[illegible] Width [illegible] length [illegible] weight [illegible] speed [illegible] distance [illegible]

[illegible].—[illegible] weight [illegible]

1904.

[illegible]

[illegible].—[illegible]

[illegible].—[illegible]

[illegible]

[illegible] They [illegible] by the [illegible]

Third Category.—Motor-lifted Machines with a Driver.

[illegible] distance [illegible]

[illegible].—Length [illegible] width [illegible] height [illegible] weight [illegible]

1897.

Ader.—Width [illegible] weight [illegible]

[illegible]

1903.

[illegible] weight [illegible]

[illegible].—[illegible] Width [illegible] length [illegible] weight [illegible]

1906.

[illegible] Width [illegible] length [illegible] weight [illegible] 660 lbs. [illegible]

[illegible].—Width [illegible]

1907.

[illegible]

[illegible].—[illegible]

Esnault Pelterie.—[illegible] weight [illegible] speed [illegible] m.p.h. [illegible] of wings [illegible]

Esnault Pelterie.—[illegible] as given by the author. [illegible] as possible.

[illegible] The [illegible]

[illegible]

[illegible] by means of an [illegible] of the wing.

[illegible] and the [illegible] After [illegible] turned [illegible] the two middle wheels [illegible]

All the [illegible] single lever worked [illegible] left hand.

Width [illegible] weight [illegible]

The [illegible] and wood [illegible] being carefully prepared.

✠ ✠

we gave [illegible] had [illegible] and so he was raised up to a height [illegible] above the railway arches and then letting go dropped to the ground. Since then he had not been able to follow his occupation [illegible]. Dr. De Costa stated that in his opinion the story was a right one. Mr. Eustace Short and the [illegible] to the defendants [illegible] and when he gave the order [illegible] go [illegible]

The view that there was no [illegible] and judgment given for the respondents with costs.

NEWS OF THE WEEK.

American Honours for the Wrights

The American Senate has passed a resolution instructing the Secretary of War to award the Brothers Wright gold medals in recognition of their services in the advancement of flight.

BRITISH ARMY AEROPLANE.—British Army aeroplane in full flight above Farnborough Common before the accident.

Wright as a Tutor

If there is one thing which might conceivably be more difficult than flying, it is that of teaching someone else to do the trick, but as there are several in this country who are thinking of taking a few lessons in the new art, it may be of interest for them to know something beforehand of Wright's methods as master. Simplicity is very naturally the keynote of his teaching. In fact, one may say that the pupil learns from his own experience, for his lessons consist of sitting beside the pilot and grasping dummy levers, which move in unison with those which the pilot himself controls. Studying the thus-controlled movements of his hands, the pupil gradually begins to put two and two together until one day he realises that it is he who is managing the machine, and that he has at last learned how to fly.

Wright's Opinion of the Landes

According to M. Paul Tissandier, who is Wright's third pupil, Wilbur Wright recently expressed himself to the effect that he had never seen a real ground more perfect than that formed by the Landes at Pau.

Wright's English Pupils.

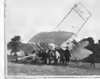
It is reported that Wilbur Wright is to have an English pupil in the person of Mr. Hubert Latham, who has just arrived at Pau. The rumours on these matters are at present somewhat contradictory, however, inasmuch as it has also been stated that Wilbur Wright will not train anyone until after April except M. Paul Tissandier and the two pupils to whom he has already commenced giving lessons, who are, as our readers know, Chevalier de Lambert and Captain Lucas Girardville. Lord Northcliffe has during the week been amongst the visitors to the Wright Brothers.

The King of Spain Dissembles

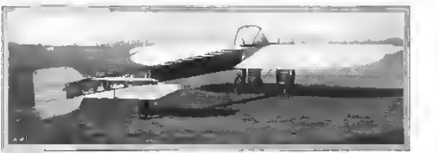
Sovereigns are not free to do altogether as they like in the matter of travelling abroad. And Spain is even more strict in this respect than most, so that His Majesty Alfonso XIII apparently finds himself in somewhat of a difficulty to know how to gratify his very noble desire to fly under the tutelage of Wilbur Wright. It is now rumoured that the King of Spain will invite Wilbur Wright to bring his machine to San Sebastian during next April.

Monaco Meeting Now On.

On Sunday last, January 24th, the world's first aviation meeting at Monaco came into being. A somewhat imaginary existence it had, for there was no one there to take part. That is a small matter at the present moment, however, for the event remains open until March 24th, and we do not doubt in the least that some one of the numerous aviators will make a bold bid for a portion of that 100,000 francs prize money. It would be worth a wetting, in the sea. Dangerous, it may be urged,



BRITISH ARMY AEROPLANE.—View of the aeroplane after it had collapsed. The elevator and front steering tips are practically demolished, it will be noticed, but the main framework and surfaces are not so badly injured.



"BLERIOT No. 9."—General view of the large Blériot monoplane taken from behind, showing the tail elevator and rudder. The steering tips on the extremities of the main wings are also clearly visible. The span is 10 metres, the surface 25 square metres, the weight with pilot 560 kilogs., and the engine a 60-h.p. 16-cyl. Antoinette.

has ordered a set of special floats for his aeroplane from Messrs. Despujols.

As a matter of fact, the organisers themselves are none too anxious to see any trials take place as yet, for this question of falling into the water is after all a somewhat serious matter, and there is a certain amount of moral responsibility for nothing greater attaching to the officials which makes them anxious to have some means available for protecting [illegible] accidents. When the motor boat races take place the French Admiralty lend a couple of destroyers for this purpose, but the Government could hardly be expected to make the Monaco Bay a headquarters for two of their boats for a period of two or three months on end. The motor boats which ordinarily would not turn up until towards the beginning of April have been invited to come earlier, and so there should be ample assistance more or less always afloat on the water.

Encouragement of Flight in France.

In connection with the vote of 100,000 francs included in the Budget of the French Minister of Public Works, to be expended in the encouragement of the science of aviation, M. Louis Barthou has formed the following Committee to assist him in the disposition of the fund:—MM. Maurice Lévy, Member of the Institute (President); Henri Deutsch de la Meurthe (Vice-President); D'Estournelles de Constant, Senator; Léon Janet, Deputy; Lecornu, President of the Commission Aéronautique; Maxime Soreau, President of the Commission d'Aviation of the Ae.C. de F.; Painlevé, Vice-President of the Ligue Nationale Aérienne; Léon Barthou, President of the Commission Aérienne of the Touring Club of France; Blériot, Member of the Chambre Syndicale Aéronautique; Lecornu, Engineer-in-Chief of Mines; Jonguet, Engineer of Mines (secretary).

Professors of Aviation in France.

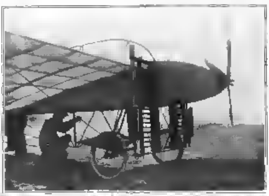
FRANCE keeps a vigilant eye on the doings of other countries, in spite of the fact that she is herself more often than not the leading spirit of progress. But in connection with the establishment of Chairs of Aviation she has failed to get the lead, and the action of Germany, not to mention England, has evidently aroused her to a sense of the necessity for some more or less immediate action. The Minister of Education, in a recent conversation, expressed himself as being absolutely in sympathy with the idea, and only wished he had the funds to put it into practice. In the meantime he hoped that the French Press would educate the public to a sense of its importance, so that when a suitable opportunity arose for obtaining [illegible] the necessary support should not be lacking.

M. Pelterie on "Aviation."

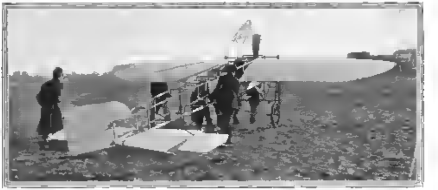
M. ESNAULT PELTERIE, having recovered from his recent indisposition, gave his lecture on "Aviation" before the members of the Aero Club, on Tuesday last, at 8.45 p.m., at the Royal Automobile Club, 119, Piccadilly, W. The opportunity of hearing this distinguished and successful French aeronaut was sufficient to ensure a very large attendance. On page 60 we give a *resumé* of the lecture.

The Farman Neubauer Aeroplane.

THE aeroplane which has been constructed by the Société Zodiac to the designs of Messrs. Farman and



"BLERIOT No. 9." View from the front of the machine, showing the propeller-screw in front and the ladder-like radiators on either side of the box girder frame which carries the engine. The torpedo-shaped petrol tank behind the wheels is another feature of the construction, as also are the elastic bands which supplement the spring suspension. The main wings are covered with a vellum-like paper.



"BLERIOT No. 11."—Rear view of the short-span Bleriot, showing the steering tips on the tail. The span of the wings is 7 metres, the area 16 square metres, the weight 230 kilogs., and the engine a 7-cyl. 25 h.p. R.E.P.

Neubauer has been taken to the aerodrome at Buc. It is of the biplane multicellular type, and has an elevator in front and a rudder behind. The control is also assisted by warping the main planes. The weight of the whole machine is 250 kilogs., without the engine or propeller. Two motors have been obtained for experimental purposes, one a 40-h.p. R.E.P. of the [illegible]-cylinder type, and the other an 8-cylinder Renault.

Bleriot Flies with His Short Span Machine.

MUCH interest attaches to the short span No. 11, which M. Bleriot exhibited at the Paris Salon, and the trials of its practicability are naturally being watched by all aviators with especial concern. So far these essays have been going very satisfactorily, and [illegible] Saturday last a flight of 100 metres was accomplished. The speed was of course very high indeed, and although no official record was made, it was estimated at quite 75 k.p.h. The altitude attained was only about 2 metres, but the flight was stable from start to finish. The supporting surface of this machine is only about 12 metres.

"Antoinette V." and "VI."

THE Société Antoinette has rented a ground at Chalons, whereon they are erecting an aeroplane shed, and will carry out their trials. The latest machines with which these will be undertaken will be "Antoinette V," belonging to M. Demanest, and "Antoinette VI," belonging to Captain Burgeat.

Farman to Start Again.

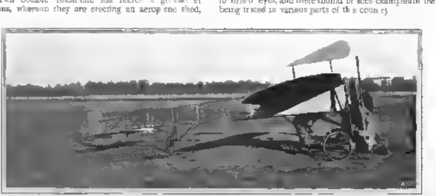
HENRY FARMAN'S new aeroplane shed at Bouy, near Chalons, is finished, and Henry Farman himself is expected to recommence his trials there almost immediately.

Moore-Brabazon's Progress.

MOORE-BRABAZON has a shed alongside that belonging to Henry Farman, and continues to regularly make experiments which will, he hopes, lead up to the crossing of the Channel.

Voisin Aeroplanes in the United Kingdom.

JUST before leaving for the States on board the Mauretania on Saturday last, Mr. F. R. Simms sent us the interesting news that he had secured the exclusive British rights of MM. Voisin Frères aeroplanes, such as are used by Farman, Delagrange, Moore-Brabazon, &c. Doubtless, therefore, they will soon become more familiar to British eyes, and there should be seen examples of them being tested in various parts of this country.



"BLERIOT No. 11."—Side view of the short-span Bleriot taken on Issy Parade Ground during the experiments.

Motor Boat and Aero Show in Berlin.

UNDER the auspices of the Kaiserlicher A.C. an exhibition of motor boats and aeronautical machines is to be held in 1909 from March 1st to April 4th. The venue will be the hall of the Zoological Gardens, and the Show is to be organised in connection with the Verein Deutscher Motorfahrzeug-Industrieller.

Nice and Cannes Meetings Uncertain.

THE Aero Club of Nice has abandoned its intention of organising a meeting owing to the difficulty of finding a suitable ground and of placing any such grounds as might prove suitable in good condition. On the other hand, the Mayor of Nice is by no means so ready to ca[illegible]n, and he has therefore formed a special committee to make further inquiries into the matter.

Anjou Cup.

THE attitude of the Aéro Club de l'Ouest in respect to its aviation week in Anjou is just the reverse to that of the Nice Club. M. René Casmer, who is Hon. President, is particularly keen on carrying the whole scheme through, and there seems every likelihood at the present time of his efforts resulting in success. Various satisfactory grounds of between two and four kilos. in length are available which would serve as an aerodrome in starting and finishing, and also for any smaller events which are organised; that situated at Sorges is at present the most popular selection. An attempt is being made to obtain the sum of 25,000 francs from the Municipality of Angers, which sum was originally destined for use in connection with the motor car Grand Prix, and it is hoped that by September, when the proposed meeting is to take place, a prize fund of 100,000 francs will have been got together.

Aerodrome at Avor.

THE Comte de Champgrand suggests that the Camp d'Avor would form a suitable aerodrome. Avor is conveniently situated with respect to Paris, as the express trains [illegible] and it is possible to start [illegible] about [illegible] and to return by a train about five o'clock in the evening.

Aviation Meeting at Issy.

SOME of the numerous aviators who are making experiments at Issy have suggested organising an aviation meeting, in which project they have already enlisted the hearty support of the districts in the immediate locality, who have offered to found a prize of 1,000 francs.

Aviation in Argentina.

THERE are many sporting residents in Argentina who follow closely the new developments which take place in Europe, and it is not, therefore, very surprising to hear that the subject of aviation is receiving a good deal of attention just now. Several experimenters are at work with aeroplanes, and there is talk of organising a Grand Prix aviation race with prizes amounting to about £8,000 in value.

Aeroplaning to the Pole.

IN his next North Pole expedition Mr. Sand[illegible] Perkins intends, we are informed, to make use of an aeroplane after he has gone as far as possible towards his destination by boat. Among other uses to which he proposes putting his flying machine will be that of sending home wireless telegrams to say how he is getting on.

First American Money Prize.

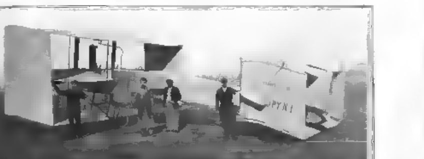
THE first money prizes offered for aviation in America have been put up by our contemporary *Aeronautics*. They are four in number and are of the value of 50 dollars each. They will be awarded to the first four pilots who fly 500 metres in the presence of responsible witnesses (including a newspaper reporter). Only aviators who have not yet flown so far as this are eligible.

The Student Pilots.

THE student pilots of the Ligue Nationale are about to acquire two new Voisin aeroplanes in addition to that which, as was announced last week, they had already secured. One of the new machines will be fitted with a 50-h.p. Antoinette engine, but some discussion has yet to take place as to what motor shall be fitted on the other one.

The L.N. is selecting six students to receive the first instructions in flight, and these will form the nucleus of a body of "pupil teachers" from whom the other students will learn by degrees. Trials at Juvisy will be free on Sundays, but may be carried out on weekdays by paying a nominal fee.

A [illegible] named M. Legagneux has been engaged to teach the selected pupils, and M. Delagrange is giving personal attention to the matter in the early stages.



THE GOUPY TRIPLANE.—General view of the Goupy triplane from the rear, showing the longitudinal girder which carries the engine in front and the box-kite tail behind. The propeller is right in front, and the pilot sits behind the engine. The tail contains a rudder and has small steering flaps outside the [illegible]. The span of the main planes is 7 metres, their surface 80 square metres. The weight of the whole machine is 660 kilogs., and the engine is a 50-h.p. Antoinette.

When the table party of [illegible] is turned up to take their [illegible] they were eager enough most at [illegible] to the idea of making a practical trial, when one and all voted before the rest so to speak with a view to [illegible] the honour of being first. Next day only four turned up, and on this occasion no suggestion of actually flying was made as M. Delagrange had arranged to hold a class on the construction of the machine.

Pommery Cup.

The Ligue Nationale, in whose charge the Pommery Cup has been placed, have decided that the flight must be undertaken as one continuous effort without landing or replenishing. In other words, it must be in the nature of the cross-country trip which Farman made between Chalons and Rheims. The cup is of the value of 50,000 francs, and is awarded half yearly [illegible] 500 francs cash.

Commission Aérienne Mixte.

The C.A.M. met on January 20th to receive the report of its representatives at the International Congress at London, which delegates were, as our readers know, the delegates of the Aero Club of France. The report was to the effect that the division of the control of aeronautics in France on lines already drawn up—viz., the French Aero Club shall take charge of aviation while the C.A.M. looks after dirigibles and flying machines—had been accepted, and that in consequence the delegates to the next meeting of the F.A.I. would be nominated by both bodies. It was further reported that the F.A.I. had adopted for 1909 the general rules relating to aviation which had been elaborated by the C.A.M. and that they would make these obligatory not only in France, but abroad.

Rheims Circuit.

The Commission Aérienne Mixte has appointed a sub-committee, consisting of the Comte de la Vaulx and Messrs. Blériot, [illegible], Rousseau, Quinton, Chaix, and [illegible] to inquire into the question of the Rheims Circuit with the local committee. The latter has as its President the Mayor of Rheims, Dr. Langlet, and also upon its committee the Marquis of Polignac and Messrs. De Bary, A. Prévost, E. Wenz, de Bermont, de Brantes, and several others.

More Cross-Channelites.

The absence of any practical efforts to actually fly the Channel does not appear to deter more entrants from sending in their names for the event. Among the latest which our contemporary the *Daily Mail* announces, is another Englishman, Mr. Hubert Latham. A well-known explorer, M. Paquerel, has also apparently notified his intention to try for the prize.

A Zeppelin Escape.

During the course of a storm recently one of the rafts for the *Zeppelin* [illegible] was blown over to the opposite bank, but happily the airship itself was not attached at the time and thus on this occasion escaped otherwise inevitable damage.

Prince Henry and the German Airships.

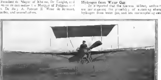
The interest Royalty takes in aeronautical matters is manifest in several directions and in Germany especially do the members of the Royal house take an active part in encouraging progress. Even in the present spell of cold weather Prince Henry of Prussia, the Kaiser's brother, made an ascent in the Gross dirigible on Saturday, January 23rd, and remained aloft for about an hour. The airship ascended from the headquarters at Tegel about 9.15 a.m. and headed for the centre of the city, returning via Charlottenburg, and descending at 10.40. A wind of about 5 metres per second was blowing. A second successful ascent was made in the afternoon.

Paris to London in the Air.

It appears that M. Surcouf, Director of the Soc. Astra, is in negotiation for the formation of a British company on somewhat similar lines and intends if his scheme is carried through to deliver the first airship by sailing it from Paris to London. Even as [illegible] M. Surcouf has stated, as we foreshadowed some little time ago, that this little trip will probably be undertaken in addition to another from Paris to Antwerp. If the English company is formed the Soc. Astra will probably be interested to the extent of about £20,000 net. Lord Brassey's name has been associated with the new concern.

Hydrogen from Water Gas.

It is reported that the German military authorities are investigating the possibility of obtaining cheaper hydrogen from water gas, and are contemplating estab-



THE OBRE BIPLANE.—Front view of the Obre aeroplane, which came to grief in its early trials as recorded last week. Although essentially of the biplane type, this machine has a very small expanse of upper deck. It has a light monoplane tail and rudder behind which are invisible in the above view. The span of the lower deck is 10 metres; the engine is a 60-h.p. 3-cyl. Anzani.

lishing installations for its production in [illegible] and the provinces. A saving of [illegible] per cent. [illegible] and with aeronautical experiments so much on the increase this is naturally a very important consideration.

Gordon Bennett Balloon Cup.

At a general meeting of the Swiss Aero Club held at Zurich on Saturday last it was decided that the balloon race for the Gordon Bennett Cup should start from there, the date to be some time during the first fortnight in October. Already a team of three, representing Italy, have been entered.

The Stella Club.

A new club known as the "Stella Club" has been formed in France for ladies interested in aeronautics. Its origin is due to the initiative of Madame Surcouf, wife of the well-known aeronautical engineer, and already some thirty ladies have joined. At the present time its practical interest will mainly be centred in ballooning, especially it would seem night ballooning, for according to Madame Surcouf there is nothing more poetic than moonlight trips in the air. Members of the sterner sex are to be admitted to membership, but debarred from any participation in the administration. The subscription is 100 francs per annum, which entitles the member to one free balloon trip per year. At the moment the club does not possess any balloons of its own, but the French Aero Club have very kindly placed their park at St. Cloud at their disposal, and have made arrangements whereby they can hire one of the Club balloons.

In England the necessity for any special ladies' club is obviated by the admission of both sexes to the Aero Club and to the Aero Club League.

New Affiliations of the Ae.C.F.

At its last committee meeting, the Aero Club of France accepted the proposals of affiliation from the Aviation Committee of Bayonne-Biarritz, the Dunkirk Aeronautique Club, the Sport d'Amiens, and the Picardy Aero Club.

Danish Aeronautic Society.

An aeronautic society has been formed in Denmark, under the presidency of M. Meesgaard, Minister of Commerce, to study the general science of aeronautics and aviation. It has evoked the interest of many leading men in the country.

Vosges A.C. Aero Section.

The Automobile Club of Vosges at its last committee meeting decided on the creation of an aviation section, and will bring the proposal before the next general meeting.

Ardennes Aero Club.

At a meeting of the founder members of the new body the rules of the Aero Club of France were adopted with such modifications in detail as were found necessary. The Hon. President is Senator Gobron, and the President Dr. Abd el Nour. An arrangement has been made whereby members of the Ardennes Automobile Club become members of the Aero Club also. The subscription has been fixed at 5 francs per annum, but a candidate paying 100 francs down can become a founder member for life.

Sylvia Spencer Elected.

Our readers will be pleased to hear that at the last election for the London Orphan Asylum, Watford, one of the successful candidates was Sylvia Spencer, the seven-year-old daughter of the late Stanley Spencer.

Amiens Aeronautic Society.

Under the title of Le Sport d'Amiens, a new aeronautical society has been founded at Amiens, with M. Rene [illegible] as President and M. Bleriot as Vice-President. Affiliation has been entered into with the Aero Club of France.

Ostend Aero Club.

Another aero club has been formed in Belgium under the name of the Aero Club d'Ostende et du Littoral. Baron Raoul de Vriere has been mainly instrumental in its creation. The neighbourhood of Ostend provides several natural aerodromes.

Aero Club du Centre.

The Aero Club du Centre was formed on January [illegible] at Orleans. Messrs. Leblanc and Guyot are two of the most prominent organisers of the scheme, and the new body intends, if possible, to get the Aero Club of France to run the Gordon-Bennett Cup race in their district.

The Aeronautique Club.

The Aviation Committee of the French Aeronautique Club, which has M. de Pischoff as President, recently met to discuss the programme for the ensuing year. Among other enterprises it is organising visits to various aeroplane works and establishing prizes for gliding flights.

The Pilot Certificate.

The French Aero Club has formulated the regulations under which it will issue its Pilot Aviator Certificate. Candidates must have accomplished three timed circuits of at least 1 kilometre in length, and the trials must be made without a passenger on different days, and all within a month.

Societe Forezienne d'Aviation.

Under the above title a society has been founded to encourage the efforts of inventors in the district of St. Etienne. The idea was started by our contemporary the *Forez Auvergne Vivarais Illustre*, and is supported by the Prefect, the Mayor and several other of the leading personalities of the district. Our readers will

Wilbur Wright's newly-erected aeroplane shed and dwelling at Pont Long, near Pau.

remember that we drew attention last week to the enterprising efforts of MM. [illegible] and Renaud in giving a demonstration consisting of dismantling the aeroplane for which they could not afford to buy an engine, and it would appear as if this new society of encouragement is a direct outcome of their efforts, for they are themselves concerned in it.

M. Bollée thinks of Flying.

M. BOLLÉE, who had, it will be remembered, the distinction of being Wilbur Wright's heaviest passenger during his stay at Le Mans, naturally feels a little forsaken since the American flyer has departed from his native place, and it is said that he contemplates consoling himself by taking up aviation on his own account.

A School for Flying.

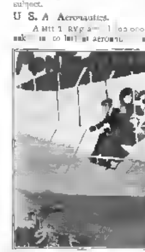
THE Trevot School of Motoring, under the control of Captain Trevor Wright, has proved itself capable of imparting knowledge in regard to motoring, and Captain Wright means to be well to the fore in imparting similar knowledge to prospective aeroplanists. He is already laying all his plans for dealing effectively with this new problem, and hopes, we understand, to publish before long particulars of the new Flying Department which is to form a regular part of the Trevot School. Readers who are desirous, therefore, of becoming conversant with the design and working of aeroplanes should keep in touch with the Trevot School.

L.N. Assistance at Issy.

As our readers are aware, the municipality at Issy-les-Moulineaux have to bear the expense of policing the ground, and as the Ligue Nationale consider that this is an unfair tax upon pioneer work, that body have decided to defray half the expenses from [illegible] and are approaching the French Commissioner of Police on the subject.

U.S.A. Aeronautics.

A MILITARY grant of [illegible]00,000 dollars, which has been asked for to help aeronautics in the United States, has been refused, to the great disappointment of all who are interested in the art. This lack of support will, it is anticipated, delay progress very considerably.



Monaco Flight Competition.—The appropriate advertisement poster which has been published to make known the contest for flyers at Monaco from January 24th to March 24th.

Selfridge Memorial.

A COMMITTEE has been formed in Washington by Lieut. Lahm, Mr. Graham Bell, and Mr. Curtiss, with the object of erecting a monument to the memory of Lieut. Selfridge, who was killed on September 17th, 1908, in the Wright accident.

Aviation in Belgium.

THERE is, it appears, a little friction between the Aero Club of Belgium and the Automobile Club of Belgium, as to their respective official positions in the aeronautical world. The Aero Club demands exclusive right to control all contests for the coming year, but the Automobile Club also contemplates organising aeroplane trials.

Morsang sur Orge Prize.

M. [illegible], Mayor of Morsang sur Orge, has placed under the control of the Aero Club de France a prize for a flight in that district. The official rules have not yet been published, but the distance to be accomplished will be about 20 kiloms. across country.

Chair of Airship Construction.

THE distinction of having a Chair of Aeronautics, which has fallen to the lot of the Göttinger University, has roused the famous Charlottenburg Technical School to press upon the Ministry of Education for funds wherewith to establish a Chair of Airship Construction in connection with its faculty of marine engineering.

The Kite-Flying Association.

AT Caxton Hall last week, forty kite-flyers constituted themselves into an association under the title of the Kite Flying Association of the United Kingdom. A prize for the best flight made by the most scientifically constructed kite has been offered by Major Baden Powell.

Lectures on Flight.

ANOTHER new departure in the activity of the Ligue Nationale consists in the organisation of a course of free lectures on aviation. Among those who have consented to deliver them are Colonel Renard, Captain Ferber, M. Archdeacon, M. Breguet, M. Levavasseur, and M. [illegible].

Banquet at Pau.

ON Thursday of last week, January 21st, the Mayor of Pau gave a banquet at the Winter Palace in honour of the Wrights and the Committee of the Bearn Aero Club. The function was a great success, 500 invitations having been issued.

R.E.P. Trials.

M. ESNAULT PELTERIE has taken his monoplane Rep 2 bis to his aerodrome at Buc.

Wright's "Fortifications."

IT was a wise precaution to erect a barrier around Wright's little homestead on the [illegible] Landes, for it gives him breathing space in which to live adjacent but relatively detached from the horde of eager visitors and pressmen who crowd around. No one is admitted except the especially privileged, and in the meantime Wright himself carefully pursues his work of erecting his machine. Everything is now ready for the installation of the engine.

Aeroplane Laws.

OFFENDERS against the law (when caught) would be taken up by the aero-police (to a convenient height) and dropped on to a Suffragette meeting or other riotous concourse. This will explain what is really meant by "a bolt from the blue."—*Punch.*

AERO CLUB OF THE UNITED KINGDOM.

OFFICIAL NOTICES TO MEMBERS.

Gordon-Bennett Aeronautical Race, 1909.

The Gordon-Bennett Cup having been awarded to the Swiss Aero Club, the race will take place at Zurich in the autumn of this year, and the exact date will be announced later.

In order to comply with the rules it is necessary, if the Aero Club of the United Kingdom desire to contest the Cup, that the challenge should be sent in before March 15th, 1909.

The Committee of the Aero Club of the United Kingdom will select the three competitors to represent the Club, and intending candidates are requested to notify the Secretary on or before March 1st, 1909, of their willingness to compete, if chosen. Applications must be accompanied with a cheque for £20, the entry fee, which amount will be returned should the competitor not be selected.

Candidates must be members of the Aero Club of the United Kingdom, and also hold the Club Aeronauts Certificate, or must undertake to obtain such Certificate on or before April 30th, 1909.

Lecture by M. Robert Esnault-Pelterie.

M. Robert Esnault-Pelterie delivered a very interesting lecture on "Aviation," with cinematograph illustrations, to the members of the Aero Club and the Royal Automobile Club on Tuesday last. There was a very large attendance of members of both clubs, and a report of the lecture will be found in a separate article in this Journal.

London Balloon Company.

The Committee of the Aero Club have placed at the disposal of the London Balloon Company, Royal Engineers, their aerodynamical apparatus presented to the Club by Mr. P. Y. Alexander. The apparatus has been removed to the headquarters, where the members will carry on their experiments. Messrs. Short Brothers, the official aeronautical engineers to the Aero Club, have also lent them a balloon, and Mr. Frank McClean has supplied them with a motor.

H. PERRIN,
Secretary.

The Aero Club of the United Kingdom,
166, Piccadilly, W.

* * * *

RUBBER PROOFED OR VARNISHED BALLOON MATERIAL?

By PAUL BRODTMAN.

The winning of the "Blue Ribbon" of aeronautics, viz., the Gordon-Bennett Balloon Race, which took place on October 21st, 1907, at St. Louis, and also the first prizes won in the races at Mannheim, Liege and Brussels by balloons constructed of Continental rubber proofed balloon material, invite comparison between balloons made of proofed material and [illegible].

The varnishing of the latter material is effected with oil of linseed, which is liable (through the oxygen in the air) to become resinous, and in the course of time forms a hard mass. The length of time required for this varnishing process also depends upon the temperature and moisture in the air.

Should an ascent be made before the envelope is thoroughly dry, great care must be exercised in packing up the balloon after flight; the balloon cannot be packed up in the warm sunshine, as the rays have an injurious effect upon the varnish, making it soft and sticky. The only method of packing up varnished balloons is by taking them into a shady place for cooling, or waiting until after sunset, which in most cases causes great inconvenience and waste of time.

Another disadvantage of many varnished balloons is that they are liable to spontaneous combustion if packed for a period of more than 20 to 30 hours. To obviate this, a quantity of about 4 lbs. of French chalk is applied to the envelope; in wet weather this treatment has to be repeated, and it is also necessary to protect it against any moisture or frost.

As the varnishing process diminishes the elasticity of the material, the balloon must not be touched by hand before same is perfectly dry.

The folding of the envelope after it has been deflated must also be done very carefully, as the slightest touch from a root, stone or other sharp obstacle on the ground is liable to damage it.

Consequently it will be seen that the greatest care must be exercised in the handling of such material. Balloons of this nature belonging to members of the Paris Aero Club are stored at the works of the builders to insure treatment by expert hands and proper revarnishing when necessary.

It is also recognised that only 20 to 30 ascents can be made with a varnished balloon.

Quite different is the rubber proofed balloon material manufactured by the Continental Co. In this material a layer of rubber is placed between two layers of material, rendering same unsurpassed for its gas-retaining qualities. One of the main factors of "vulcanised rubber" is this quality combined with elasticity.

Apart from the natural depreciation in the course of time, envelopes of this material do not at any time require re-proofing, whilst no special precautions are necessary for their treatment. When wet, they can simply be placed out to dry, or even if packed up in a wet condition the material would not be affected.

There are no set rules for packing up after a landing has been effected, as this can be accomplished in the hottest weather, and even if the material is wet. The superiority of such balloons is manifest, and they are the only ones that can be really relied upon for military service.

Although the initial cost is greater, this is easily overcome, as these balloons work out cheaper in the long run, owing to their being able to make at least 60 to 100 ascents, besides having additional advantages in the way of greater reliability and the facility with which they may be handled.

Another of its many advantages is that rubber balloons do not require any renovation, thus the upkeep is reduced to a minimum, whilst balloons of a varnished character require to be constantly looked after and repaired by experts, making the upkeep an expensive item. These repairs are so continuous and expensive that the manufacturers of balloons are kept busy and even depend upon this class of work for a good part of their profit.

In conclusion we would mention the unfair criticism respecting the heavy weight of rubber proofed envelopes; the admitted difference is hardly half an ounce per square yard, but one must not forget this slight difference is more than compensated for after the first re-varnishing, which is necessary after a few ascents.

It has been proved that the superiority of rubber-proofed balloons more than counterbalances the slight variation in weight, which is even an advantage. *Four* times in succession rubbered balloons have been in competition against varnished ones (which were specially built for races) and *four* times rubber has proved its great superiority over varnish by carrying off all the laurels.

Whilst some of these successes may, to some extent, be put down to good luck, yet it is quite logical that our rubber proofed sheetings have natural advantageous properties with which varnished [illegible] cannot be compared.

* * *

CORRESPONDENCE

** The name and address of the writer (not necessarily for publication) must in all cases accompany letters intended for insertion or containing queries.*

PROPELLERS AND MOTORS.

To the Editor of FLIGHT.

SIR,—I have been very much interested with the correspondence in FLIGHT re propellers. It appears to me that if a person of moderate means is constructing an aeroplane it would be wise to place oneself in a position for the time being to do without any makers whatever, by so studying propellers as to be able to construct one's own, as each propeller varies with the type, speed, build, weight and materials used, a mere [illegible] being able to do any better than a novice from the practical point of view, when experimenting with the particular aeroplane for which the propeller or propellers is or are intended. If propeller [illegible] builders did this there would be no making, which is always an [illegible] chance. It is always a safe thing to play the [illegible] of English [illegible] every other production away from the propeller testing platform, and say that you can get so many more per cent. of power, but the "proof of the pudding is in the eating," and it requires a lot of [illegible] to "prove the pudding" when dealing with manufacturers as little experienced as oneself.

Yours truly,

South Newington, Jan. 25th. [illegible]

P.S.—I note with interest that a 4-oz. electro-motor is mentioned in a letter (Jan. 23rd) of a number of 8 ozs. with all attachments. What sized model will these fly?

From my experience it is impossible to obtain stable and reliable flight with a machine having under about [illegible] sq. ft. of [illegible]. What weight accumulator has to be carried to drive the 4-oz. motor, where can it be obtained, what power will it develop, and how long will it go?

Both these [illegible] known to be impracticable from experience, unless a new source of power has been discovered, and I think it behoves correspondents to beware lest they, by giving impracticable advice, lead those who do not know any better away from the paths they should follow in experimental work.—M. L.

RE AERONAUTICAL BIBLIOGRAPHY

To the Editor of FLIGHT.

SIR,—In answer to your invitation in FLIGHT, January 23rd, 1909, I have great pleasure in giving a list of works which I hope will be of use to you in compiling your Aeronautical Bibliography.

Flying Machines: Past, Present and Future. A popular account of flying machines, dirigible balloons, and aeroplanes. By A. W. Marshall and Henry Greenly. Published by Percival Marshall and Co., [illegible]. Contains résumé of the work of various experimenters. Following are some of the references given:—

Kites. M. Hargrave. "Engineering," Feb. 15th, 1895, Vol. LIX.

Model Aeroplanes. M. Hargrave. "Transactions of Royal Society of New South Wales," Vols. XVII, XIX, XXI, XXIII and XXIV.

Sustaining Surfaces. Mr. H. Phillips. "Engineering," Aug. 14th, 1885, Vol. XL.

Maxim's Propelling Machinery. "Engineering," Aug. 10th, 1894, Vol. LVIII.

Maxim's Trial Runs. "Engineering," Mar. 17th, 1893.

Soaring Machines. M. A. Chanute. "Cassier's Magazine," June, 1901.

Air Propellers. W. G. Walker. "Engineering," Feb. 16th, 1900.

Flight of Birds. S. [illegible] M. de Lucy, of [illegible]. "Engineering," Vol. V (?).

The above references can be consulted in many public libraries.

Artificial and Natural Flight. By Maxim. Published by Whittaker at 5s. An excellent work, the [illegible] being based on the author's own actual experiments. Easily followed by anyone with a knowledge of ordinary arithmetic. A popular price.

The following works are written in French, and, being of very low price—practically within the reach of all, have undoubtedly contributed much towards rousing popular enthusiasm in France in [illegible]. It was noticeable that, whilst particulars of the Wright aeroplane are freely published, practically nothing can be obtained relating to French aeroplanes:—

La Revue Aérienne. Official organ of La Ligue Nationale Aérienne. Published twice monthly at 0 fr. 50 c. In addition to historic and technical notes, has so far contained, No. 7 now due, description of the Wright machine and a serial article on "The Study of Experimental Aerodynamics."

Les Premiers Hommes-Oiseaux. Wilbur et Orville Wright. [illegible] Peyrey, 1908. Published by H. Guiton, 35, rue de [illegible], Paris, at 1.50 fr. A [illegible] account of the Brothers Wright's experiments, with many [illegible].

L'Aéroplane des Frères Wright. Histoire, expériences et description. Published by Berger-Levrault et Cie., Éditeurs, [illegible] des Beaux Arts, Paris, at [illegible] fr.

L'Aviation et le Vol des Oiseaux. Paul [illegible] [illegible] 190[illegible]. Published by Léon Hayard, 8, rue du Croissant, Paris, [illegible]. An interesting 16-page booklet sold in streets of Paris.

Yours faithfully,

Bristol, Jan. 24th. C. H. CHALLENGER.

[We are much obliged to Mr. Challenger for sending the above list, and we trust that others will follow his helpful example.—ED.]

WANTS AND ENQUIRIES.

To the Editor of FLIGHT.

SIR,—As one who is intensely interested in the problem of mechanical flight, I was delighted to read the first number of your splendid journal, which is [illegible] paper or magazine published in [illegible], and I have them all.

I don't know if you are issuing [illegible] to those who are searching for an invention. I am in that position, and being endowed with a good head [illegible]. If so, I am sending [illegible] of my ideas, the result of careful thought and planning:—

Monoplane, [illegible] surface about 35 [illegible] 2 propellers [illegible] elevator forward and rudder [illegible] system by a new method of flexible planes [illegible] stability [illegible]. I should use a fairly heavy motor which would be certain to give good results.

At present I am working at an idea for the suspension of the body and the chassis for monoplanes.

I shall be only too willing to send plans and further details to anyone who would be willing to finance me, provided the idea seemed feasible. Of course the machine would be constructed in England.

Wishing all [illegible] success to FLIGHT, and, above all, for the advancement of the new science in our own country,

Yours [illegible] sincerely,

San Sebastian, Spain. L. S.

To the Editor of FLIGHT.

SIR,—I am writing to you to ask if you will be so kind as to give me some advice and information.

I am a motor engineer, having been through shops, University College, &c., and am very anxious to pick up a knowledge of the actual building of aeroplanes.

[illegible] emplanes [illegible] thoroughly [illegible] want is [illegible] expect- [illegible] and [illegible] possible [illegible] be [illegible] [illegible] [illegible] wonderful [illegible]

[illegible]

[illegible] January 23rd. [illegible]

ENGINES FOR MODELS.

To the Editor of FLIGHT.

SIR,—Will you give me the usual space [illegible] that a number of your readers [illegible] of small powerful motors for aeroplanes [illegible] to you a list of the [illegible] through your correspondence column who [illegible] willing to make small engines to order. [illegible] advertisement [illegible] only object is to do what I can to assist inventors of flying machines to make our country [illegible]

Yours faithfully,

Holloway, Jan. 23rd. C[illegible]

To the Editor of FLIGHT.

SIR,—With regard to the letters at the [illegible] by Messrs. Knight and Taylor, [illegible] I should be glad to hear of any further details [illegible] the [illegible] used [illegible] power [illegible] the above gentlemen would [illegible] the following questions [illegible] the general interest of your readers:—

1. Duration or distance of flight and whether circular or straight.
2. Were [illegible] propellers [illegible] engine power [illegible] gear [illegible]?
3. Whether [illegible] accumulators [illegible] what were their combined weight? [illegible]
4. [illegible] the type of aeroplane as well as engine used by Messrs. Knight and Taylor.

I think you will agree with me [illegible] these [illegible] are given no useful purpose can be served by the mere statement of [illegible] while on the other hand they may serve to mystify [illegible] and lead them into false channels of [illegible]

If it may be allowed [illegible] we [illegible] of [illegible] experience [illegible] very pleasing to hear [illegible] the [illegible] of any experimenters, [illegible] though [illegible] further knowledge by them. Personally [illegible] model experimenters should [illegible] co-operate with [illegible] before the readers of your paper [illegible] elimination [illegible] prejudice [illegible] and [illegible] to place [illegible] position than [illegible] branches of aerial locomotion.

Yours faithfully,

[illegible] Jan. 20th. WALTER [illegible]

MORE TERMINOLOGICAL INEXACTITUDES.

To the Editor of FLIGHT.

SIR,—It [illegible] very [illegible] while you have [illegible] a special paper to deal with the important question [illegible] which we are all very [illegible] terminology [illegible] a thousand [illegible] to be hampered [illegible] by [illegible] terms. It matters little what name is given to a [illegible] provided we all recognise [illegible] by the [illegible] terminology.

A little while ago, over the nom-de-plume of "Ignoramus," I [illegible] as Mr. Lanchester [illegible] with your use of the word "Aerodrome" as applied to a *place* where [illegible] were carried out. The week January 23rd [illegible] "Belgian Aero Salon," p. 53, [illegible] use the word "Orthopter." Whilst personally [illegible] "Ornithoptere" [illegible] science and study of birds [illegible] I say, provided we [illegible] agree. Could not [illegible] Aero Club [illegible] some such authorised body draw up a glossary of terms to prevent the confusion which must inevitably occur if each of us uses a different word for the same thing.

Yours faithfully,

[illegible] A. S[illegible], Major A.V.C.

(Once more we think we have a complete answer to Major Sullivan re the terminology employed in FLIGHT, as there is a very distinct difference between the meaning of "orthoptère" and "ornithoptère." The former is evidently derived from the Greek words "orthos" (meaning regular or straight) and "pteron" (wing), whereas the latter is derived from the words "ornithos" (genitive of "ornis," a bird) and "pteron." In natural history as applied to insects, the former word has been adopted for those insects which have fore densely [illegible] wings, e.g., the grasshopper, and the latter word is employed for a particular class, e.g., the species of butterfly which have bird-like wings. Apparently, therefore, the term "orthoptère" is the more correct word to employ for such flying machines of the flapping wing type as those in which the wings are skin covered or otherwise rendered smooth surfaced, while the term "ornithoptère" should only be used for those which have bird-like wings (i.e., wings built up of feathers or their equivalent). It is also interesting in this connection to note that there is yet another radical difference between the two classes of insects to which naturalists have applied the two words, for whereas the "regular-winged" class, with their four wings, perform working strokes with their posterior pair during the recovery (or up) stroke of the anterior pair, the "bird-like-winged" class have recovery (up) strokes between each "working" stroke. It does not, however, appear as though this distinction might be [illegible] as the difference between the two terms [illegible] which Major Sullivan [illegible] even though [illegible] derivation basis, the word "ortho" (as meaning "regular") might perhaps be twisted round to imply regularity of flapping (down strokes) as against the intermittent flapping of the bird. As regards Major Sullivan's suggestion that a glossary of aeronautical terms ought to be drawn up, we may say that we have had this task in hand for a considerable time, and hope to set out the [illegible] in our [illegible] next week.—ED.)

* * *

ANSWERS TO CORRESPONDENTS

N. R. (Ipswich).—The figures you quote probably refer to two different models. As regards your second question, we would draw your attention to [illegible] leading article of this week.

* * *

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